

Abstract

This invention discloses a lead-free Sn-Zn-Al-Ag solder alloy, which is composed of 7-10 wt% of Zn, up to 0.5 wt% of Al, up to 4.0 wt% of Ag, and the balance of Sn; and a lead-free Sn-Zn-Al-Ag-Ga solder alloy, which is
5 composed of 7-10 wt% of Zn, up to 0.5 wt% of Al, up to 4.0 wt% of Ag, up to 4.0 wt% of Ga; and the balance of Sn. The lead-free solder alloys of the present invention have better tensile strength and elongation than the conventional Sn-Pb solder alloys. In addition, the lead-free solder alloys of the present invention have a melting point lower than 200°C, which is
10 close to the 183.5°C of an eutectic Sn-Pb alloy.